

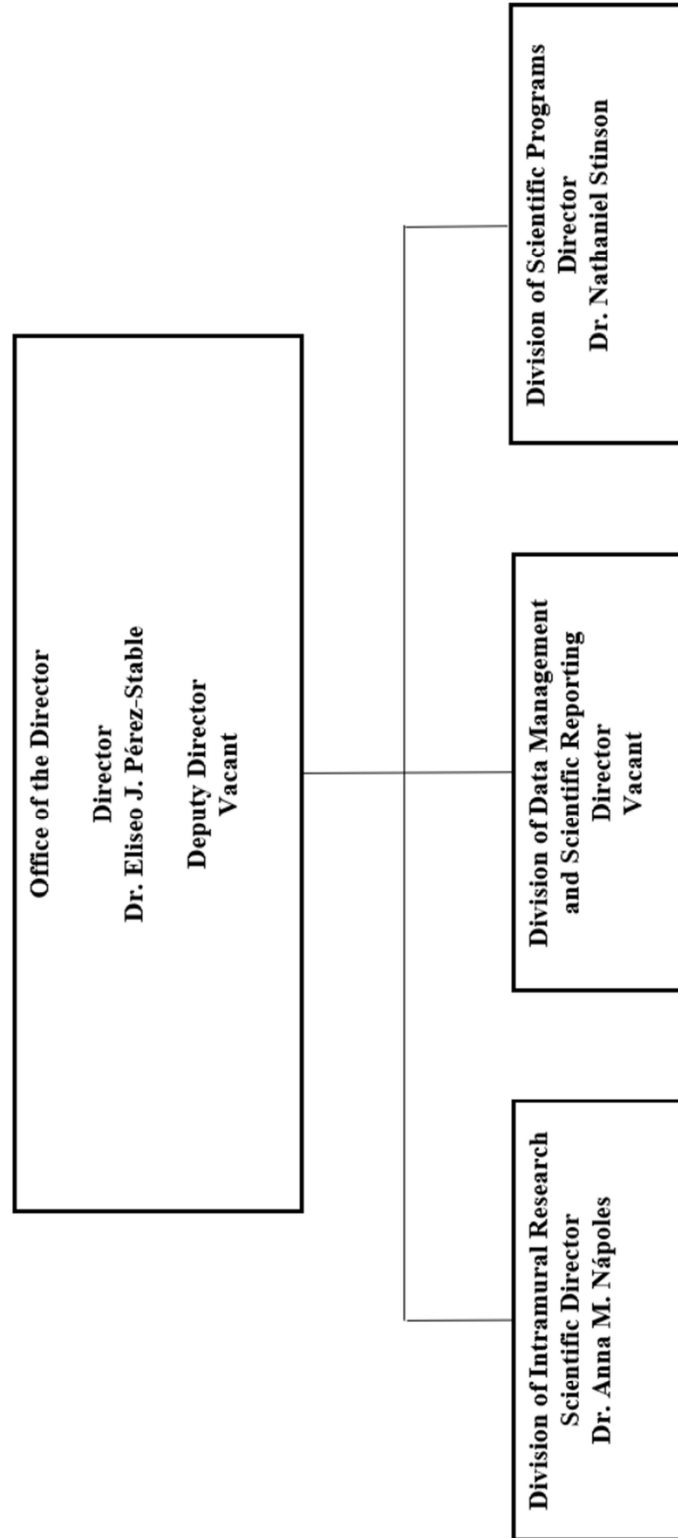
DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

National Institute on Minority Health and Health Disparities (NIMHD)

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**National Institutes of Health  
National Institute on Minority Health and Health Disparities  
Organizational Structure**



## **NATIONAL INSTITUTES OF HEALTH**

### **NATIONAL INSTITUTE ON MINORITY HEALTH AND HEALTH DISPARITIES**

For carrying out section 301 and title IV of the PHS Act with respect to minority health and health disparities research, [\$335,812,000]~~\$305,498,000~~: *Provided*, That funds may be used to implement a reorganization that is presented to an advisory council in a public meeting and for which the Committees on Appropriations of the House of Representatives and the Senate have been notified 30 days in advance.

**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Amounts Available for Obligation<sup>1</sup>**  
(Dollars in Thousands)

<b>Source of Funding</b>	<b>FY 2019 Final</b>	<b>FY 2020 Enacted</b>	<b>FY 2021 President's Budget</b>
Appropriation	\$314,679	\$335,812	\$305,498
Secretary's Transfer	-1,081	0	0
Subtotal, adjusted appropriation	\$313,598	\$335,812	\$305,498
OAR HIV/AIDS Transfers	-387	0	0
Subtotal, adjusted budget authority	\$313,211	\$335,812	\$305,498
Unobligated balance, start of year	0	0	0
Unobligated balance, end of year	0	0	0
Subtotal, adjusted budget authority	\$313,211	\$335,812	\$305,498
Unobligated balance lapsing	-16	0	0
Total obligations	\$313,195	\$335,812	\$305,498

<sup>1</sup> Excludes the following amounts (in thousands) for reimbursable activities carried out by this account:  
FY 2019 - \$1,501    FY 2020 - \$1,100    FY 2021 - \$425

**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Budget Mechanism - Total<sup>1</sup>**

(Dollars in Thousands)

MECHANISM	FY 2019 Final		FY 2020 Enacted		FY 2021 President's Budget		FY 2021 +/- FY 2020 Enacted	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
<b>Research Projects:</b>								
Noncompeting	194	\$111,254	203	\$121,969	186	\$99,375	-17	-\$22,593
Administrative Supplements	(22)	2,218	(10)	1,500	(4)	500	(-6)	-1,000
Competing:								
Renewal	0	0	0	0	0	0	0	0
New	57	28,327	49	24,176	110	51,317	61	27,141
Supplements	0	0	0	0	0	0	0	0
Subtotal, Competing	57	\$28,327	49	\$24,176	110	\$51,317	61	\$27,141
Subtotal, RPGs	251	\$141,799	252	\$147,644	296	\$151,192	44	\$3,548
SBIR/STTR	28	10,564	31	11,349	26	10,302	-5	-1,047
Research Project Grants	279	\$152,362	283	\$158,993	322	\$161,494	39	\$2,501
<b>Research Centers:</b>								
Specialized/Comprehensive	22	\$31,745	22	\$31,630	15	\$16,450	-7	-\$15,180
Clinical Research	0	0	0	0	0	0	0	0
Biotechnology	0	0	0	0	0	0	0	0
Comparative Medicine	0	0	0	0	0	0	0	0
Research Centers in Minority Institutions	19	63,189	21	74,500	21	68,250	0	-6,250
Research Centers	41	\$94,934	43	\$106,130	36	\$84,700	-7	-\$21,430
<b>Other Research:</b>								
Research Careers	19	\$2,559	23	\$3,530	24	\$3,680	1	\$150
Cancer Education	0	0	0	0	0	0	0	0
Cooperative Clinical Research	0	0	0	0	0	0	0	0
Biomedical Research Support	0	0	0	0	0	0	0	0
Minority Biomedical Research Support	0	497	0	93	0	43	0	-51
Other	26	19,232	23	18,516	24	15,827	1	-2,689
Other Research	45	\$22,287	46	\$22,140	48	\$19,551	2	-\$2,589
Total Research Grants	365	\$269,584	372	\$287,263	406	\$265,745	34	-\$21,519
<b>Ruth L. Kirchstein Training Awards:</b>	<b>FTTPs</b>		<b>FTTPs</b>		<b>FTTPs</b>		<b>FTTPs</b>	
Individual Awards	11	\$450	11	\$457	10	\$457	-1	\$0
Institutional Awards	0	9	0	10	0	9	0	-1
Total Research Training	11	\$459	11	\$467	10	\$466	-1	-\$1
<b>Research &amp; Develop. Contracts</b> <i>(SBIR/STTR) (non-add)</i>	92 (0)	\$16,952 (114)	56 (0)	\$15,382 (117)	36 (0)	\$10,993 (106)	-20 (0)	-\$4,389 (-10)
Intramural Research	6	5,113	7	7,500	7	6,875	0	-625
Res. Management & Support	64	21,104	61	25,200	61	21,420	0	-3,780
Res. Management & Support (SBIR Admin) (non-add)	(0)	(4)	(0)	(5)	(0)	(3)	(0)	(-3)
Buildings and Facilities		0		0		0		0
Total, NIMHD	70	\$313,211	68	\$335,812	68	\$305,498	0	-\$30,314

<sup>1</sup> All items in italics and brackets are non-add entries.

## **Major Changes in the Fiscal Year 2021 President's Budget Request**

Major changes by budget mechanism and/or budget activity detail are briefly described below. The FY 2021 President's Budget for NIMHD is \$305.5 million, a decrease of \$30.3 million from the FY 2020 Enacted level. The FY 2021 President's Budget reflects the Administration's fiscal policy goals for the Federal Government. Within that framework, NIMHD will pursue its highest research priorities through strategic investments and careful stewardship of appropriated funds.

### Research Project Grants (RPGs) (+\$2.5 million; total \$161.5 million):

NIMHD will fund approximately 322 RPGs in FY 2021. Funding will support existing and new NIMHD initiatives as well as investigator-initiated research. Funding for non-competing RPGs falls by \$23.6 million in FY 2021 due to grants completing their performance period and application of a 7.0 percent cut to the commitment level for the remaining non-competing awards. The reduction in funding for non-competing RPGs allows a \$27.1 million increase in competing awards, for an increase from 49 competing awards in FY 2020 to 110 awards in FY 2021.

### Research Centers (-\$21.4 million; total \$84.7 million):

The reduction in FY 2021 will require budget cuts to all NIMHD Centers of Excellence and Research Centers at Minority Institutions but will help prioritize funds within NIMHD's overall request level toward the RPG award portfolio.

### Other Research (-\$2.6 million; total \$19.6 million):

NIMHD will continue to award new Career Development grants while also supporting other intra-NIH collaborative projects as well as the NIMHD Research Endowment Program.

### Research Management and Support (-\$3.8 million; total \$21.4 million):

The reduced funding relative to FY 2020 will help prioritize funds toward NIMHD's RPG awards while still providing program management and administrative support to the Institute.

**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Summary of Changes**

(Dollars in Thousands)

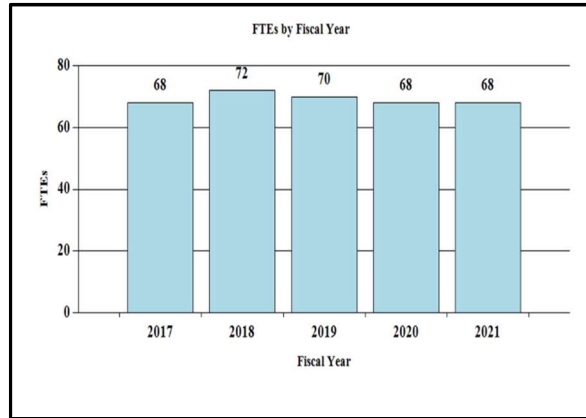
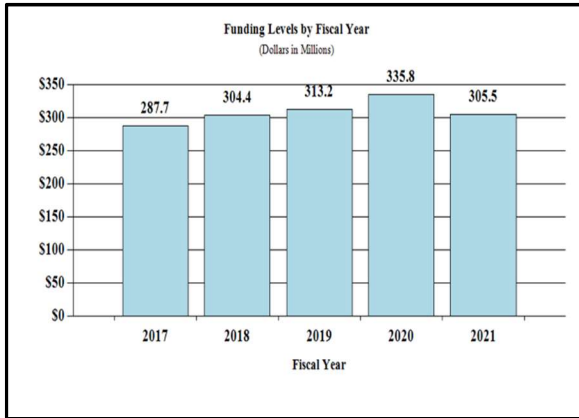
<b>FY 2020 Enacted</b>	\$335,812
<b>FY 2021 President's Budget</b>	\$305,498
<b>Net change</b>	-\$30,314

CHANGES	FY 2021 President's Budget		Change from FY 2020 Enacted	
	FTEs	Budget Authority	FTEs	Budget Authority
<b>A. Built-in:</b>				
<b>1. Intramural Research:</b>				
a. Annualization of January 2020 pay increase & benefits		\$1,748		\$12
b. January FY 2021 pay increase & benefits		1,748		26
c. Paid days adjustment		1,748		-7
d. Differences attributable to change in FTE		1,748		0
e. Payment for centrally furnished services		201		-11
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		4,926		78
Subtotal				\$99
<b>2. Research Management and Support:</b>				
a. Annualization of January 2020 pay increase & benefits		\$11,708		\$75
b. January FY 2021 pay increase & benefits		11,708		181
c. Paid days adjustment		11,708		-44
d. Differences attributable to change in FTE		11,708		0
e. Payment for centrally furnished services		1,487		-78
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		8,225		136
Subtotal				\$270
Subtotal, Built-in				\$369

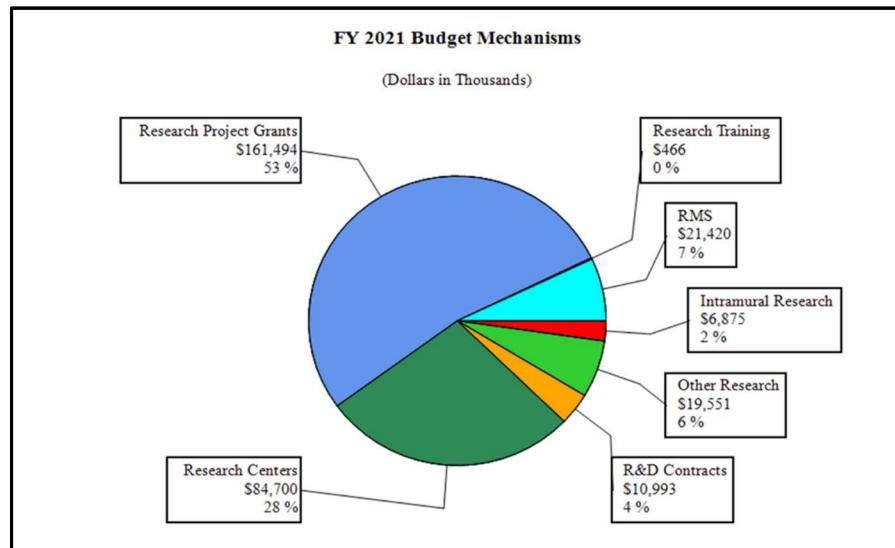
CHANGES	FY 2021 President's Budget		Change from FY 2020 Enacted	
	No.	Amount	No.	Amount
<b>B. Program:</b>				
<b>1. Research Project Grants:</b>				
a. Noncompeting	186	\$99,875	-17	-\$23,593
b. Competing	110	51,317	61	27,141
c. SBIR/STTR	26	10,302	-5	-1,047
Subtotal, RPGs	322	\$161,494	39	\$2,501
2. Research Centers	36	\$84,700	-7	-\$21,430
3. Other Research	48	19,551	2	-2,589
4. Research Training	10	466	-1	-1
5. Research and development contracts	36	10,993	-20	-4,389
Subtotal, Extramural		\$277,203		-\$25,909
6. Intramural Research	FTEs 7	\$6,875	FTEs 0	-\$724
7. Research Management and Support	61	21,420	0	-4,050
8. Buildings and Facilities		0		0
Subtotal, Program	68	\$305,498	0	-\$30,683
Total changes				-\$30,314

## Fiscal Year 2021 Budget Graphs

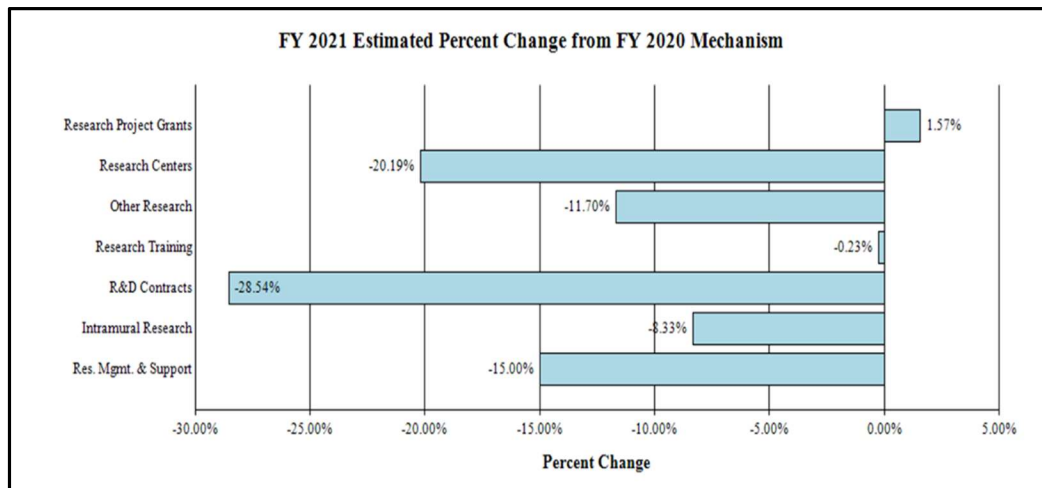
### History of Budget Authority and FTEs:



### Distribution by Mechanism:



### Change by Selected Mechanisms:





**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Budget Authority by Activity<sup>1</sup>**  
(Dollars in Thousands)

	FY 2019 Final		FY 2020 Enacted		FY 2021 President's Budget		FY 2021 +/- FY2020	
<b><u>Extramural Research</u></b>	<b><u>FTE</u></b>	<b><u>Amount</u></b>	<b><u>FTE</u></b>	<b><u>Amount</u></b>	<b><u>FTE</u></b>	<b><u>Amount</u></b>	<b><u>FTE</u></b>	<b><u>Amount</u></b>
<b><u>Detail</u></b>								
Integrative Biological and Behavioral Sciences		\$50,358		\$52,964		\$54,122		\$1,158
Community Health and Population Sciences		46,797		47,968		52,788		4,820
Clinical and Health Services Research		67,589		66,519		62,561		-3,958
Research Centers on Minority Health and Health		96,271		107,658		85,507		-22,151
Training and Career Development		25,979		28,003		22,226		-5,777
<b>Subtotal, Extramural</b>		<b>\$286,995</b>		<b>\$303,112</b>		<b>\$277,203</b>		<b>-\$25,909</b>
<b>Intramural Research</b>	<b>6</b>	<b>\$5,113</b>	<b>7</b>	<b>\$7,500</b>	<b>7</b>	<b>\$6,875</b>	<b>0</b>	<b>-\$625</b>
<b>Research Management &amp; Support</b>	<b>64</b>	<b>\$21,104</b>	<b>61</b>	<b>\$25,200</b>	<b>61</b>	<b>\$21,420</b>	<b>0</b>	<b>-\$3,780</b>
<b>TOTAL</b>	<b>70</b>	<b>\$313,211</b>	<b>68</b>	<b>\$335,812</b>	<b>68</b>	<b>\$305,498</b>	<b>0</b>	<b>-\$30,314</b>

<sup>1</sup> Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Authorizing Legislation**

	<b>PHS Act/ Other Citation</b>	<b>U.S. Code Citation</b>	<b>2020 Amount Authorized</b>	<b>FY 2020 Enacted</b>	<b>2021 Amount Authorized</b>	<b>FY 2021 President's Budget</b>
Research and Investigation	Section 301	42§241	Indefinite		Indefinite	
National Institute on Minority Health and Health Disparities	Section 401(a)	42§281	Indefinite	\$335,812,000	Indefinite	\$305,498,000
<b>Total, Budget Authority</b>				<b>\$335,812,000</b>		<b>\$305,498,000</b>

**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Appropriations History**

<b>Fiscal Year</b>	<b>Budget Estimate to Congress</b>	<b>House Allowance</b>	<b>Senate Allowance</b>	<b>Appropriation</b>
2012	\$214,608,000	\$214,608,000	\$272,650,000	\$276,963,000
Rescission				\$523,460
2013	\$279,389,000		\$280,236,000	\$276,439,540
Rescission				\$552,879
Sequestration				(\$13,875,364)
2014	\$283,299,000		\$281,416,000	\$268,322,000
Rescission				\$0
2015	\$267,953,000			\$269,154,000
Rescission				\$0
2016	\$281,549,000	\$272,493,000	\$287,379,000	\$279,718,000
Rescission				\$0
2017 <sup>1</sup>	\$280,680,000	\$286,446,000	\$292,323,000	\$289,069,000
Rescission				\$0
2018	\$214,723,000	\$293,583,000	\$297,784,000	\$303,200,000
Rescission				\$0
2019	\$280,545,000	\$306,821,000	\$314,845,000	\$314,679,000
Rescission				\$0
2020	\$270,870,000	\$341,244,000	\$330,968,000	\$335,812,000
Rescission				\$0
2021	\$305,498,000			

<sup>1</sup> Budget Estimate to Congress includes mandatory financing.

**Justification of Budget Request**  
***National Institute on Minority Health and Health Disparities***

Authorizing Legislation: Section 301 and title IV of the Public Health Service Act, as amended.

Budget Authority:

	FY 2019 Actual	FY 2020 Enacted	FY 2021 Budget Request	FY 2021 + / - FY 2020
BA	\$313,211,000	\$335,812,000	\$305,498,000	-\$30,314,000
FTE	70	68	68	0

Program funds are allocated as follows: Competitive Grants/Cooperative Agreements; Contracts; Direct Federal/Intramural and Other.

**Director's Overview**

The National Institute on Minority Health and Health Disparities (NIMHD) leads scientific research to improve minority health and reduce health disparities. NIMHD applies a multi-level approach to achieve its mission, which includes conducting and supporting research in minority health and health disparities; promoting and supporting the training of a diverse research workforce; translating and disseminating research information; fostering innovative collaborations and partnerships; and planning, coordinating, reviewing and evaluating minority health and health disparities research and activities of the National Institutes Health (NIH).

NIMHD is advancing the science of minority health and health disparities to foster the dynamic and complex evolution of these distinct fields. Building on current research programs and activities, NIMHD utilizes several strategies to promote scientific discoveries. These strategies include a new minority health and health disparities research framework that identifies multiple domains and levels of influence that may contribute to health disparities throughout life which serves as a guide for scientists conducting health disparities research (see figure 1 depicting framework on page 15); the development of methods and measurements that apply to minority health and health disparities science; interventions tailored for specific health disparity populations; research on the etiology of health disparities and minority health outcomes across the life course; and resources to increase understanding of how patterns of health disparities in the U.S. vary by population characteristics and geographic area.

NIMHD has made significant investment in research to understand the pathways by which social experiences throughout life affect behavioral, genetic, and biological functions and influence health trajectories or disease risk in health disparity populations, including racial and ethnic minorities. Under the *Social Epigenomics Research Focused on Minority Health and Health Disparities Initiative* launched in 2016, NIMHD has funded 18 investigator-initiated projects. This research provides insights into the mechanisms by which socially mediated changes in epigenomes (environmental influences that affect how genes are read by cells), contribute to

differences in health outcomes among racial and ethnic minority and other health disparity populations. For example, research on the epigenetic mediation or chemical modifications to single genes, of adverse social context on stress response, emotional development and health in children and adolescents, received national recognition with a Presidential Early Career Award for Scientists and Engineers. This research uses epigenome data on 2,000 children to describe methylation patterns by race and ethnicity and socioeconomic status to determine any epigenetic associations with social adversity, biological processes, and socioemotional development. Another example is research examining how social stressors in the maternal environment influence maternal and fetal gene expression in the prenatal environment on children's health.

Advances in minority health and health disparities research are occurring in three targeted areas. Through integrative biological and behavioral sciences research, NIMHD will develop tailored interventions that leverage understanding of increased risk of diseases based on defined biological factors, such as - kidney disease related to the Apolipoprotein L1 (APOL1) gene, and type 2 diabetes mellitus. NIMHD also funds and conducts clinical and health services research to evaluate the role of therapeutic relationships between clinicians and patients from health disparity populations with chronic medical conditions, to improve disease management and promote health care equity. Finally, NIMHD's research in community health and population sciences will leverage the established community-engaged research programs and existing cohort studies among health disparity populations to define biologic, behavioral, and community factors that contribute to resilience and better health outcomes. To translate and disseminate information on minority health and health disparities research, NIMHD is creating tools to code, map, and identify health burden specific to racial and ethnic minority and health disparity populations that can help to shape novel research studies and interventions. For example, NIMHD will lead a research collaboration with other NIH Institutes and Centers to develop a profile of the U.S. burden of disease at the county and census tract levels by categories of race and ethnicity, socioeconomic status, sex, and geography.

Over the past year, NIMHD released two supplements in scientific journals as a part of its efforts to disseminate research information and maintain communications with the broader community on NIMHD's work. These publications focused on opportunities to advance the next generation of minority health and health disparities and plans to advance these fields by leveraging accomplishments thus far. The *New Perspectives to Advance Minority Health and Health Disparities Research* journal supplement in the *American Journal of Public Health* documented the NIMHD science visioning process to transform minority health and health disparities research, culminating in 30 key strategies for researchers to employ to advance the science of minority health and health disparities research. These strategies include developing methods and measurements for health disparities; research on etiology that examine racism, the life course, biology, health services and social determinants; as well as structural, behavioral, and multi-level interventions to reduce health disparities. The *Addressing Health Disparities through the Utilization of Health Information Technology* journal supplement in *Medical Care* discussed strategies for utilizing health information technology to reduce health disparities, and improve healthcare quality, processes, and outcomes.

## **NIH Director's Theme: Science with an Eye to the Future: The Long Arc of Research**

### *State of Minority Health and Health Disparities Research 20 Years Ago*

Minority health and health disparities is an evolving scientific field that coalesced in the past 20 years. Between 1980 to 2000, there was a dearth of data on the causes of poor health outcomes among racial and ethnic minorities with many studies limited to comparisons among Black and White populations. The creation of the National Center on Minority Health and Health Disparities (NCMHD) at NIH, by the enactment of the *Minority Health and Health Disparities Research and Education Act of 2000*, illuminated the important role of research to improve minority health and address health disparities. The initial years were focused on promoting minority health and health disparities research in the scientific community and designating health disparity populations beyond racial and ethnic minorities to include rural residents and individuals of less privileged socioeconomic status. In addition, building research capacity at institutions and supporting research training and career development among racial and ethnic minority populations underrepresented in biomedical sciences were important focus areas. NIMHD also played an essential role in strengthening the community-based participatory research model as a legitimate scientific approach to involve communities in better understanding and intervening on the complex causes of health disparities.

### *Current State of Minority Health and Health Disparities Research*

Scientific advancements in minority health and health disparities research included expansion of issues of equity in access to health care and description of existing disparities in outcomes to a focus on multifactorial pathways that produce health disparities. To encourage transdisciplinary and team science approaches, NIMHD developed clear definitions for minority health and health disparities, defined outcomes that matter to scientists, clinicians, and patients, and created a research framework that depicts health determinants that can impact health at multiple levels across the life course relevant to minority health and health disparities. Together, the definitions and research framework form the basis on which NIMHD will continue to lead the science of minority health and health disparities through tailored interventions focusing on the effects of behavior, racism, biology, social determinants, place, and health services. NIMHD-funded research has helped to increase the inclusion of underrepresented populations in national and local data collection systems. Through increased training opportunities for underrepresented early stage investigators, investigator-initiated research, career development awards, and fellowships, NIMHD will continue to foster research workforce diversity.

### *Future of Minority Health and Health Disparities Research*





To assess progress in improving minority health and reducing health disparities, NIMHD will continue to create and refine methods and measures of health care determinants, processes and outcomes relevant for health disparity populations, and specific to the multidimensional nature of minority health and health disparities. Leveraging health information technology, NIMHD will

champion and facilitate routine collection of measures in clinical care. NIMHD will advance effective strategies to increase inclusion of health disparity populations in clinical trials, data systems and biological specimen repositories. NIMHD's priorities include:

- Designing and informing the development of tailored interventions to address modifiable determinants of health disparities,
- Increased investments in health information technology, and
- Health disparity simulation models using artificial intelligence, big data and computational science relevant to minority health and health disparities research to develop interventions and inform health policies.

Figure 1.

## National Institute on Minority Health and Health Disparities Research Framework

		Levels of Influence*			
		Individual	Interpersonal	Community	Societal
Domains of Influence (Over the Lifecourse)	Biological	Biological Vulnerability and Mechanisms	Caregiver-Child Interaction Family Microbiome	Community Illness Exposure Herd Immunity	Sanitation Immunization Pathogen Exposure
	Behavioral	Health Behaviors Coping Strategies	Family Functioning School/Work Functioning	Community Functioning	Policies and Laws
	Physical/Built Environment	Personal Environment	Household Environment School/Work Environment	Community Environment Community Resources	Societal Structure
	Sociocultural Environment	Sociodemographics Limited English Cultural Identity Response to Discrimination	Social Networks Family/Peer Norms Interpersonal Discrimination	Community Norms Local Structural Discrimination	Social Norms Societal Structural Discrimination
	Health Care System	Insurance Coverage Health Literacy Treatment Preferences	Patient-Clinician Relationship Medical Decision-Making	Availability of Services Safety Net Services	Quality of Care Health Care Policies
Health Outcomes		 Individual Health	 Family/ Organizational Health	 Community Health	 Population Health

National Institute on Minority Health and Health Disparities, 2018.  
\*Health Disparity Populations: Race/Ethnicity, Low SES, Rural, Sexual/Gender Minority  
Other Fundamental Characteristics: Sex/Gender, Disability, Geographic Region

### Overall Budget Policy:

The FY 2021 President's Budget request is \$305.5 million, a decrease of \$30.3 million or 9.0 percent below the FY 2020 Enacted level. These reductions are distributed across all programmatic areas.

## **Program Descriptions and Accomplishments**

### **Integrative Biological and Behavioral Sciences**

NIMHD is seeking to garner more profound insights into how biological and behavioral factors shape health disparities. One approach underway is to build a portfolio of studies on biological and behavioral mechanisms and pathways that influence resilience and susceptibility to adverse health conditions that disproportionately impact health disparity populations. One study in this area sought to identify how DNA methylation profiles can modify gene activity associated with or that could accurately classify atopy, the genetic tendency to develop allergic diseases and atopic asthma in minority school-aged children. The results suggest DNA methylation patterns distinguish asthma among Puerto Rican children, who have a higher burden of the disease. DNA methylation profiles were noticeably different between Puerto Rican children with and without atopy.<sup>1</sup> A second study examined whether estrogen receptor beta (ER $\beta$ ), a group of proteins inside cells that is activated by the sex hormone estrogen, could be a potential marker and therapy target for triple negative breast cancer (TNBC), a more aggressive type of breast cancer with poorer prognosis because of fewer targeted treatments, among African American women who have a disproportionately high prevalence of TNBC. African American tissue samples from TNBC patients had higher expression of ER $\beta$ .<sup>2</sup> Increased understanding of ER $\beta$  related to TNBC tumors can provide insights to develop targeted therapeutic interventions for TNBC in African Americans.

Integrative biological and behavioral research will examine biopsychosocial factors of social connectedness and isolation on health, wellbeing, illness, and recovery. Additionally, NIMHD will fund research on the etiology and outcomes of lung cancer, the leading cause of cancer-related deaths in the U.S. Through this research, NIMHD aims to understand the underlying causal factors and mechanisms of lung cancer disparities and the influence of race, ethnicity, and socioeconomic status on incidence and mortality patterns.

#### **Budget Policy:**

The FY 2021 President's Budget request for Integrative Biological and Behavioral Research is \$54.1 million, an increase of \$1.2 million or 2.2 percent compared with the FY 2020 Enacted level.

### **Community Health and Population Sciences**

Research on community health and population sciences is investigating and providing insights into prevention, screening, early detection, etiology and disease management for health disparity populations. Prediabetes is a health condition of major concern for millions of Americans, as it is a proven precursor condition to develop type 2 diabetes which is a major risk factor for heart disease, and stroke, all of which disproportionately affect health disparity populations. A project funded by NIMHD developed the Area Deprivation Index tool to examine variation in the availability of an in-person National Diabetes Prevention Program's (DPP) Lifestyle Changes

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<sup>1</sup> Forno E et al. *Lancet Respir Med* 2019 Apr 7(4):336-346

<sup>2</sup> Austin D et al. *Oncotarget* 2018 Sep 21; 9(74):33912-33930



Program, by county-level socioeconomic status and diabetes incidence rates. The study revealed that counties with a low incidence of diabetes offered more Lifestyle Changes Program classes (27 percent) than counties with a high diabetes incidence rate (17 percent). Among counties with high socioeconomic disadvantage, only 10 percent offered lifestyle changes classes compared to 39 percent of counties with low socioeconomic disadvantage.<sup>3</sup> Findings suggest greater efforts are needed to ensure DPP programming is available in areas with populations at the greatest risk of developing diabetes and other health conditions, such as health disparity populations.

A study comparing the cost-effectiveness of population strategies to improve diet and reduce cancer used National Health and Nutrition Examination Survey data linked to National Death Index mortality data to assess the association between mortality and nutrient intake using dietary supplements. The results found that individuals who reported taking dietary supplements had about the same risk of dying as those who obtained their nutrients through food. Mortality benefits associated with adequate intake of vitamin A, vitamin K, magnesium, zinc, and copper were limited to food consumption. Excess intake of calcium was associated with increased risk of cancer death possibly due to calcium intake from supplements rather than foods.<sup>4</sup>

Community health and population sciences research will help to inform the development of measurements and methods for health disparities, and the expansion of community research collaborations. An initiative on *Measurement Research on Minority Health and Health Disparities-Related Constructs* will support research to improve the measurement of complex social constructs that capture the lived experience of health disparity populations. The objective is to produce knowledge that can inform the field about what kinds of measurement approaches may be most suitable for different health disparities-related research questions or specific populations, settings, or contexts. *Advancing Health Disparities Interventions through Community Engaged Research* will promote and support collaborative interventions that involve relevant partners in the research process including planning, implementing, evaluating and disseminating community-level interventions to improve health and reduce health disparities.

#### Budget Policy:

The FY 2021 President's Budget request for Community Health and Population Sciences Research is \$52.8 million, an increase of \$4.8 million or 10.0 percent compared with the FY 2020 Enacted level.

### **Clinical and Health Services Research**

NIMHD-funded research on clinical and health services research is examining a wide range of issues with policy implications including variations in health care access and utilization across populations, and methods for delivering medical care to racial and ethnic minority and other health disparity populations. A study that assessed the role of health insurance coverage on health care access and utilization among cancer survivors indicated that minority pediatric cancer

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<sup>3</sup> Jayapaul B et al. Preventing Chronic Disease Vol 15 September 6, 2018

<sup>4</sup> Chen, F et al. Annals of Internal Medicine 2019;170:604–613

survivors without health insurance were 4.3 times as likely to have no regular source for cancer follow-up care, and 3.3 times as likely to have no source for noncancer follow-up care than children with private health insurance.<sup>5</sup> Uninsured minority childhood cancer survivors were also less likely to visit cancer specialists or a primary care physician in the past two years. Another study examining the health risks of minority adolescents in protective custody found that children in child welfare protective custody had a higher prevalence of mental health conditions and other chronic health conditions including allergies, obesity, vision, and hearing disorders compared to children who were not in protective custody.<sup>6</sup> Almost 40 percent of adolescents in protective custody were substance users and 37 percent participated in risky sexual behavior. Children with longer stays in protective custody had higher odds of having a mental health condition relative to those who had shorter and fewer custody experiences. The findings of this study can help to inform the development of targeted policies and interventions to address the health of minority adolescents in protective custody.

Future research in clinical and health services will continue to focus on system level factors and the influence of patient-clinician interactions on health disparities. For example, one study aims to reduce oral health disparities (excess and early onset caries) in minority children by examining the impact of an innovative care delivery approach implemented at a dental accountable care organization among Medicaid and privately insured pediatric populations. Approximately 74 percent of African Americans with kidney failure are on hemodialysis compared to 58 percent of Whites. Yet, African Americans are less likely than Whites to use a fistula, which connects an artery to a vein and is the preferred conduit to provide blood flow to the dialysis machine for chronic hemodialysis.<sup>7</sup> To better understand the use of fistula among African Americans or Blacks, NIMHD is supporting clinical and health services research to investigate barriers to arteriovenous fistula use in African American or Black hemodialysis patients by focusing on patient, clinician, and system factors that may explain this disparity. The results of this study can help to shape future interventions to improve fistula use in African American or Black hemodialysis patients.

#### Budget Policy:

The FY 2021 President's Budget request for Clinical and Health Services Research is \$62.6 million, a decrease of \$4.0 million or 6.0 percent compared with the FY 2020 Enacted level.

### **Research Centers on Minority Health and Health Disparities**

NIMHD's Research Centers conduct multidisciplinary research to improve minority health, reduce health disparities, and promote health equity. Currently, NIMHD funds Specialized Centers of Excellence, Environmental Health Disparities Centers of Excellence, Research Centers in Minority Institutions, and Transdisciplinary Collaborative Centers for Health

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<sup>5</sup> Cousineau MR et al. *Inquiry* 2019; 56

<sup>6</sup> Beal SJ et al. *Journal of Applied Research on Children* 2018; 9:2

<sup>7</sup> U.S. Renal Data System 2018 Annual Data Report;  
Zarkowsky DS et al. *JAMA Surgery* 2015;150(6):529–536

Disparities Research. At these Centers, the research focuses on a range of topics including social determinants of health, environmental health disparities, precision medicine, chronic disease prevention, and health services. A study from one NIMHD Research Center sought to understand Chronic Obstructive Pulmonary Disease (COPD) prevalence in the U.S. in terms of urban-rural residence, poverty and other factors that contribute to COPD among individuals who have never smoked. The study linked National Health Interview Survey and American Community Survey data with the National Center for Health Statistics Urban-Rural Classification Scheme to examine urban and rural COPD prevalence rates. Findings showed that rural residence, poverty, and neighborhood use of coal for heating were associated with a higher prevalence rate of COPD.<sup>8</sup>

Another study investigating sleep disparities examined the association between daily discrimination and sleep. Using wrist actigraphy, a device worn on the wrist to measure rest or activity cycles, the study assessed sleep duration, the time delay of sleep onset, and wake minutes after sleep onset. The results found that daily discrimination was associated with lower levels of same-night sleep onset latency, more sleep disturbance, more next-day daytime dysfunction, and higher next-day daytime sleepiness. African American or Blacks slept 35 minutes less than Asians and 36 minutes less than Hispanic or Latino youth. The highest levels of sleep disturbance were among Hispanic or Latino youth, while Asian youth reported the highest levels of daytime dysfunction.<sup>9</sup> The study suggests the need for further research to understand and identify mediating pathways between discrimination stress and sleep quality and its impact on developmental processes among youth. The issue of environmental health disparities remains a research priority for NIMHD, which will continue to be supported through specialized research centers. These Centers will expand research capacity and community engagement in research activities to address health disparities caused by environmental factors.

#### Budget Policy:

The FY 2021 President's Budget request for Research Centers on Minority Health and Health Disparities is \$85.5 million, a decrease of \$22.2 million or 20.6 percent compared with the FY 2020 Enacted level.

### **Training and Career Development**

A diverse and talented workforce is critical to advance scientific and technological innovations that address persistent and emerging public health issues including health disparities. NIMHD supports training and career development for the next generation of minority health and health disparities researchers using several mechanisms including fellowships for predoctoral students and career development awards for early-stage investigators. In FY 2019, more than 15 individuals received mentored research training awards to conduct translational research such as chemical modifications of DNA or epigenetics of prenatal stress, risk of obesity in children, and mobile health interventions to reduce diabetes among Chinese Americans. Central to NIMHD's

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<sup>8</sup> Raju, et al., Am J Respir Crit Care Med. 2019, 199(8): 961-969

<sup>9</sup> Chirwa, S et al. Int J Environ Res Public Health 2018 Oct; 15(10):2287

work to build a diverse cohort of biomedical researchers is the Loan Repayment Program, which each year supports the retention of more than 100 talented scientists from racial and ethnic minority backgrounds and other scientists interested in minority health and health disparities research. NIMHD will continue to support the training and career development of diverse researchers through the Loan Repayment Program. The Health Disparities Research Institute will remain a cornerstone program to support early-stage investigators, while NIMHD continues to enhance collaborations and partnerships with key national minority scientific organizations that can be instrumental in the identification and recruitment of prospective researchers from populations underrepresented in biomedical research careers.

#### Budget Policy:

The FY 2021 President's Budget request for research Training and Career Development is \$22.2 million, a decrease of \$5.8 million or 20.6 percent compared with the FY 2020 Enacted level.

### **Intramural Research**

Collaborative high-risk, high-impact, minority health and health disparities research form the fundamental research focus of the NIMHD Intramural Research Program, which also builds and sustains capacity to conduct cutting-edge transdisciplinary research to address minority health and health disparities. Recent research includes an analysis of data from a national survey of more than 8,000 youth, which found that Hispanics or Latinos and Whites were more likely to engage with online tobacco marketing than other groups.<sup>10</sup> This study also showed that compared to heterosexual men, sexual and gender minority men were more likely to engage with online tobacco marketing. In another study, community health workers or *promotoras* effectively delivered an 8-week stress management intervention to Hispanics or Latinas at high risk of depression that resulted in significant improvements in stress levels and depressive symptoms.<sup>11</sup>

NIMHD will continue to build infrastructure and conduct influential research on minority health and health disparities. For example, NIMHD will conduct research to assess how low and high-income young adult smokers respond to advertisements with and without tobacco discount coupons, and how it affects their smoking behaviors. Another study developed data mining algorithms to analyze Twitter messages to formulate tailored anti-smoking messages targeting low-income young adult daily smokers. The messages will be deployed and tested in an adaptive clinical trial that will use the National Cancer Institute's QuitGuide smoking cessation mobile application. In another study, NIMHD will use 10 years of proprietary data from annual cross-sectional surveys on consumer behaviors of adults, teens, and children to analyze topics such as media use, diet, health beliefs and attitudes, life styles, prescription drugs, recreational activities, and technology adoption related to more than 6,500 products, to assess how consumer behaviors are associated with health behaviors and health status. The study will also examine complex associations between demographic and socioeconomic factors with health and health disparities, and how these associations differ by geography.

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<sup>10</sup> Soneji, S et al. *Addict Behav*, 95, 189-196

<sup>11</sup> Sternberg, R.M., Napoles AM et al *Health Equity* 2019 Vol 3.1

**Program Portrait: U.S. Burden of Health Disparities**

The U.S. Burden of Health Disparities project will produce U.S. county-level estimates of the burden of disease stratified by race, ethnicity, socioeconomic status (SES), sex, and age. The project will produce a comprehensive report on the state of the U.S. burden of health disparities due to diseases, injuries, and risk factors by population characteristics and geographic location. The project will also result in a public platform for downloading the data and data visualizations that could be made available to intramural and extramural researchers for health disparities studies. A second component of the project will produce data at the census tract-level for several geographic sub-regions of the U.S. which carry a disproportionately high burden of disease and have substantial proportions of racially or ethnically diverse populations. This component will identify the appropriate methodologies, algorithms, data sources, SES indicators, and costs associated with generating these types of estimates for smaller geographic units that might better inform allocation of health resources and policy. This project is a collaborative effort between NIMHD, the National Heart, Lung, and Blood Institute, the National Institute on Aging, the National Cancer Institute, the NIH Office of Behavioral and Social Sciences Research, and the NIH Office of Disease Prevention.

**Budget Policy:**

The FY 2021 President's Budget request for Intramural Research is \$6.9 million, a decrease of \$0.6 million or 8.3 percent compared with the FY 2020 Enacted level.

**Research Management and Support**

Research Management and Support (RMS) activities provide support for the review, award, and monitoring of research grants, training awards, and research and development contracts. In FY 2021, RMS activities will continue to include efforts to manage and update NIMHD website content, which will include release of a health disparities data registry and an interventions portal to communicate and disseminate information effectively to the public and the many constituencies invested in the outcomes of NIMHD research.

**Budget Policy:**

The FY 2021 President's Budget request for RMS is \$21.4 million, a decrease of \$3.8 million or 15.0 percent compared with the FY 2020 Enacted level.

**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Budget Authority by Object Class<sup>1</sup>**  
(Dollars in Thousands)

	<b>FY 2020 Enacted</b>	<b>FY 2021 President's Budget</b>	<b>FY 2021 +/- FY 2020</b>
Total compensable workyears:			
Full-time equivalent	68	68	0
Full-time equivalent of overtime and holiday hours	0	0	0
Average ES salary	\$0	\$0	\$0
Average GM/GS grade	13.1	13.1	0.0
Average GM/GS salary	\$129	\$131	\$2
Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207)	\$116	\$119	\$3
Average salary of ungraded positions	\$170	\$176	\$5
<b>OBJECT CLASSES</b>	<b>FY 2020 Enacted</b>	<b>FY 2021 President's Budget</b>	<b>FY 2021 +/- FY 2020</b>
Personnel Compensation			
11.1 Full-Time Permanent	7,631	7,718	88
11.3 Other Than Full-Time Permanent	951	962	11
11.5 Other Personnel Compensation	226	228	3
11.7 Military Personnel	347	356	9
11.8 Special Personnel Services Payments	800	809	9
<b>11.9 Subtotal Personnel Compensation</b>	<b>\$9,954</b>	<b>\$10,074</b>	<b>\$120</b>
12.1 Civilian Personnel Benefits	3,025	3,143	118
12.2 Military Personnel Benefits	233	239	6
13.0 Benefits to Former Personnel	0	0	0
<b>Subtotal Pay Costs</b>	<b>\$13,212</b>	<b>\$13,456</b>	<b>\$244</b>
21.0 Travel & Transportation of Persons	207	211	4
22.0 Transportation of Things	12	12	0
23.1 Rental Payments to GSA	0	0	0
23.2 Rental Payments to Others	2	2	0
23.3 Communications, Utilities & Misc. Charges	197	201	4
24.0 Printing & Reproduction	0	0	0
25.1 Consulting Services	179	183	4
25.2 Other Services	4,804	4,900	96
25.3 Purchase of goods and services from government accounts	22,073	15,589	-6,484
25.4 Operation & Maintenance of Facilities	8	8	0
25.5 R&D Contracts	6,500	3,820	-2,680
25.6 Medical Care	15	15	1
25.7 Operation & Maintenance of Equipment	569	580	11
25.8 Subsistence & Support of Persons	0	0	0
<b>25.0 Subtotal Other Contractual Services</b>	<b>\$34,148</b>	<b>\$25,095</b>	<b>-\$9,053</b>
26.0 Supplies & Materials	89	91	2
31.0 Equipment	216	220	4
32.0 Land and Structures	0	0	0
33.0 Investments & Loans	0	0	0
41.0 Grants, Subsidies & Contributions	287,730	266,210	-21,520
42.0 Insurance Claims & Indemnities	0	0	0
43.0 Interest & Dividends	0	0	0
44.0 Refunds	0	0	0
<b>Subtotal Non-Pay Costs</b>	<b>\$322,600</b>	<b>\$292,042</b>	<b>-\$30,558</b>
<b>Total Budget Authority by Object Class</b>	<b>\$335,812</b>	<b>\$305,498</b>	<b>-\$30,314</b>

<sup>1</sup> Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Salaries and Expenses**

(Dollars in Thousands)

<b>OBJECT CLASSES</b>	<b>FY 2020 Enacted</b>	<b>FY 2021 President's Budget</b>	<b>FY 2021 +/- FY 2020</b>
<b>Personnel Compensation</b>			
Full-Time Permanent (11.1)	\$7,631	\$7,718	\$88
Other Than Full-Time Permanent (11.3)	951	962	11
Other Personnel Compensation (11.5)	226	228	3
Military Personnel (11.7)	347	356	9
Special Personnel Services Payments (11.8)	800	809	9
<b>Subtotal Personnel Compensation (11.9)</b>	<b>\$9,954</b>	<b>\$10,074</b>	<b>\$120</b>
Civilian Personnel Benefits (12.1)	\$3,025	\$3,143	\$118
Military Personnel Benefits (12.2)	233	239	6
Benefits to Former Personnel (13.0)	0	0	0
<b>Subtotal Pay Costs</b>	<b>\$13,212</b>	<b>\$13,456</b>	<b>\$244</b>
Travel & Transportation of Persons (21.0)	\$207	\$211	\$4
Transportation of Things (22.0)	12	12	0
Rental Payments to Others (23.2)	2	2	0
Communications, Utilities & Misc. Charges (23.3)	197	201	4
Printing & Reproduction (24.0)	0	0	0
<b>Other Contractual Services:</b>			
Consultant Services (25.1)	166	169	3
Other Services (25.2)	4,804	4,900	96
Purchases from government accounts (25.3)	14,321	6,597	-7,725
Operation & Maintenance of Facilities (25.4)	8	8	0
Operation & Maintenance of Equipment (25.7)	569	580	11
Subsistence & Support of Persons (25.8)	0	0	0
<b>Subtotal Other Contractual Services</b>	<b>\$19,868</b>	<b>\$12,254</b>	<b>-\$7,614</b>
Supplies & Materials (26.0)	\$89	\$91	\$2
<b>Subtotal Non-Pay Costs</b>	<b>\$20,374</b>	<b>\$12,771</b>	<b>-\$7,604</b>
<b>Total Administrative Costs</b>	<b>\$33,587</b>	<b>\$26,227</b>	<b>-\$7,360</b>

**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Detail of Full-Time Equivalent Employment (FTE)**

OFFICE/DIVISION	FY 2019 Final			FY 2020 Enacted			FY 2021 President's Budget		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
Division of Clinical and Health Services Research									
Direct:	-	-	-	5	-	5	5	-	5
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	-	-	-	5	-	5	5	-	5
Division of Community Health and Population Sciences									
Direct:	-	-	-	8	1	9	8	1	9
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	-	-	-	8	1	9	8	1	9
Division of Data Management and Scientific Reporting									
Direct:	-	-	-	-	-	-	-	-	-
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	-	-	-	-	-	-	-	-	-
Division of Integrative Biological and Behavioral Sciences									
Direct:	-	-	-	5	1	6	5	1	6
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	-	-	-	5	1	6	5	1	6
Division of Intramural Research									
Direct:	5	1	6	6	1	7	6	1	7
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	5	1	6	6	1	7	6	1	7
Division of Scientific Programs									
Direct:	20	2	22	-	-	-	-	-	-
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	20	2	22	-	-	-	-	-	-
Office of the Director									
Direct:	42	-	42	41	-	41	41	-	41
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	42	-	42	41	-	41	41	-	41
Total	67	3	70	65	3	68	65	3	68
Includes FTEs whose payroll obligations are supported by the NIH Common Fund.									
FTEs supported by funds from Cooperative Research and Development Agreements.	0	0	0	0	0	0	0	0	0
<b>FISCAL YEAR</b>	<b>Average GS Grade</b>								
2017	12.9								
2018	13.0								
2019	13.1								
2020	13.1								
2021	13.1								



**NATIONAL INSTITUTES OF HEALTH**  
**National Institute on Minority Health and Health Disparities**

**Detail of Positions<sup>1</sup>**

<b>GRADE</b>	<b>FY 2019 Final</b>	<b>FY 2020 Enacted</b>	<b>FY 2021 President's Budget</b>
Total, ES Positions	0	0	0
Total, ES Salary	0	0	0
GM/GS-15	8	8	8
GM/GS-14	24	24	24
GM/GS-13	18	18	18
GS-12	4	4	4
GS-11	0	0	0
GS-10	0	0	0
GS-9	1	1	1
GS-8	3	3	3
GS-7	2	2	2
GS-6	0	0	0
GS-5	0	0	0
GS-4	0	0	0
GS-3	0	0	0
GS-2	0	0	0
GS-1	0	0	0
Subtotal	60	60	60
Grades established by Act of July 1, 1944 (42 U.S.C. 207)			
Assistant Surgeon General	0	0	0
Director Grade	2	2	2
Senior Grade	0	1	1
Full Grade	0	0	0
Senior Assistant Grade	1	0	0
Assistant Grade	0	0	0
Subtotal	3	3	3
Ungraded	15	16	16
Total permanent positions	63	59	59
Total positions, end of year	78	79	79
Total full-time equivalent (FTE) employment, end of year	70	68	68
Average ES salary	0	0	0
Average GM/GS grade	13.1	13.1	13.1
Average GM/GS salary	125,681	129,200	131,177

<sup>1</sup> Includes FTEs whose payroll obligations are supported by the NIH Common Fund.